

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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In the Matter of)

Wireless E911 Phase I
Implementation Issues)

CC Docket 94-102
(DA 00-1875)

SEP 18 2000

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

**JOINT COMMENTS OF NENA, APCO AND NASNA
AS PUBLIC SAFETY COMMUNICATORS**

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SUMMARY

The King County Letter describes an impasse which threatens the viability of the November 1999 Order revising the cost recovery rules for wireless E9-1-1 service. The Order found that disputes over who pays for the added costs of E9-1-1 between wireless carriers and PSAPs were stalling the implementation of Phase I of the service, and thereby slowing the caller location refinements of Phase II as well. Having determined to eliminate the perceived obstruction by removing carrier cost reimbursement from the rules, the Commission must not allow the impediment to reappear as disputes over the definition of wireless carrier costs.

In their earlier comments on the record in this proceeding, wireless carriers already have acknowledged their responsibility for the kinds of costs King County believes they should take responsibility for. They did so in the context of the old rule, expecting reimbursement. But the change in the rule did not alter the physical realities or the business practices associated with the completion of wireless 9-1-1 calls. Wireless carrier responsibility for the burdens imposed in completing mobile calls to 9-1-1 exists independently of compensation arrangements. The elements of wireless carrier cost assignment also are largely independent of technology.

Briefly stated, wireless carriers should pay for network and database enhancements up to and including the interface with the Selective Router. 9-1-1 Authorities are responsible for the elements in the path from the Router to and within the PSAP.

There is evidence in the docket record of wireline telephone complicity in the delayed implementation of wireless E9-1-1. The remedy for these problems, where they exist, likely belongs with state regulatory commissions in the first instance. But the FCC's complaint processes should be open to allegations of obstruction by wireline telephone companies, whose facilities are essential at this time to 9-1-1 call completion.

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The National Emergency Number Association (“NENA”), the Association of Public-Safety Communications Officials-International, Inc. (“APCO”) and the National Association of State Nine One One Administrators (“NASNA”), hereafter “Public Safety Communicators,” are pleased to respond to the questions in the above-captioned Public Notice, DA 00-1875, arising from the request of the King County, Washington 9-1-1 Program that the Commission clarify “whether the funding of the network and data base components of Phase I service, and the interface of these components to the existing E911 system, are the responsibility of the wireless carriers or the PSAPs [Public Safety Answering Points].”¹

Statement of interest. The mission of NENA’s 7000-plus members and 46 state and overseas chapters is to foster the technological advancement, availability, and implementation of a universal emergency telephone number system. In carrying out its mission, NENA promotes research, planning, training and education. The protection of human life, the preservation of property and the maintenance of general community security are among NENA's objectives.

¹ Letter of May 25, 2000, from Marlys R. Davis, E911 Program Manager, to Thomas J. Sugrue, Chief, Wireless Telecommunications Bureau. (“King County Letter”)

APCO is the nation's oldest and largest public safety communications organization. Most of APCO's over 15,000 individual members are state or local government employees who manage and operate police, fire, emergency medical, forestry conservation, highway maintenance, disaster relief, and other communications systems that protect the safety of life, health and property. These systems include radio communication operations, telecommunications and information networks, and Public Safety Answering Points.

NASNA's title reflects its state interest and mission. While local governments are not specifically singled out as interest groups, it is important to recognize that cities, counties, towns and special districts and bodies of various descriptions represent the 9-1-1 authority for much of the nation. Many states do not have centralized administrations and rely on subordinate structures to administer emergency calling. The core of NENA's membership consists of such local 9-1-1 managers, and they are an important component of APCO's constituency as well.

Recognizing the variability inherent in these local structures, NENA has asked its state chapter presidents for advice on model cost allocation guidelines to apply to the network and database elements that must be installed or modified for wireless E9-1-1 to function effectively. NENA hopes to be able to present recommendations derived from his inquiry at or before the reply round in this proceeding. NENA plans to share the results with APCO and NASNA for their consideration prior to any FCC submission.

Introduction. The King County Letter offers background and the County's interpretation of the FCC's wireless E9-1-1 cost recovery rules as follows:

King County and several of the other counties in Washington State have ordered Phase I service from the wireless carriers who offer service within the state. . . Since Washington State

does not have a funding mechanism for Phase I and Phase II wireless E911 service, Phase I service has been ordered without carrier cost recovery under the November 18, 1999 Second Memorandum Opinion and Order, which removed the prerequisite that a cost recovery mechanism for carriers be in place before wireless carriers are obligated to provide Phase I service. . . . The PSAPs in King County and in the other counties in Washington State are capable of receiving the Phase I information over the existing E911 network, and displaying the information on the existing E911 equipment. Therefore, it is the assertion of King County that we have met the requirements for ordering Phase I service, and the wireless carriers are obligated to provide that service within six months of the orders.²

The King County Letter goes on to explain the adaptations which must be made in that jurisdiction, and in most cases around the country, to allow up to 20 digits of wireless calling number and location information to be passed through the wireline telephone company network to the PSAP:

Throughout the majority of the country, E911 system networks have been deployed using CAMA signaling, which restricts the number of digits that can be passed to eight digits. . . . Due to the impracticality of replacing the E911 networks throughout the entire country, various technologies have been specifically developed to convert the 20 digits of Phase I information sent by the wireless carriers into a usable format that can be transmitted over the existing 911 networks to the PSAPs.

These conversion technologies are frequently referred to as “Non-Call-Associated Signaling,” or NCAS, and operate by splitting the information so that CAMA trunks carry only their eight-digit maximum while the remaining digits are transmitted on a separate path. A more detailed explanation is provided in the attached Exhibit E.³

² Section 20.18 of the FCC’s rules, as revised by November 1999 order, is appended to the order at 14 FCC Rcd 20850, 20900 (“November Order”)

³ Exhibit E and the other slides in Exhibits A-E are part of a “9-1-1 Tutorial” on the NENA web site at www.nena9-1-1.org, accessible by clicking on “Desktop” and the icon for the tutorial. “Call-Associated Signaling” (“CAS”) is depicted and explained at Exh. D

Shown in the diagram at Exhibit E are links from the Mobile Switching Center (“MSC”) to the “NCAS Vendor” and the “E911 Control Office” (also known as the Selective Router).⁴ These are among the “additional network and database components that are necessary for Phase I,” referenced in the King County Letter:

Some of the wireless carriers who have responded to our Phase I service orders have considered these network and database components that are necessary for Phase I to be part of the service they deliver to the PSAPs, and will cover the cost of these components. Other carriers have agreed to implement the service only if the counties pay for some or all of these network and data base components.

King County concludes that it is “anxious to implement” Phase I of wireless E911 service but is “unable to do so until this conflict is resolved.”

In an earlier comment (August 3, 1999, pages 3-4) on wireless E911 cost elements, King County identified the following “technical components of Phase I service” which ought to be borne by wireless carriers:

- Software upgrade and routing database installation at the MSC.⁵
- Network connection from the MSC to the E911 selective router and database.
- Entry of cell/sector information into the call-routing database.
- Administrative costs of several kinds.

⁴ The connection to the “Access Tandem” is not distinctively associated with E911, but is the standard PSTN interface for wireless non-emergency and basic 911 calls to wireline seven or 10-digit numbers.

⁵ In the NCAS solution, the MSC must be able to query a Service Control Point (“SCP”) for an Emergency Service Routing Key (“ESRK”) that will direct the call to the correct Selective Router. Typically, an NCAS vendor will supply this information. (Exh. E)

In short, King County was suggesting that wireless carriers take financial responsibility for all network connections and database functions up to and including the interface with the Selective Router. 9-1-1 Authorities would continue to be responsible for the network and database elements from the Selective Router to the PSAP itself, including the fixed wireless records in what is labeled in the Tutorial diagrams as “9-1-1 Database.”⁶

The cost recovery rules. Before its amendment in the November Order, Section 20.18 of the Commission’s rules listed three “conditions for enhanced 911 services.” First, a PSAP must be capable of receiving and using the calling number and location data elements of Phase I service. Second, “a mechanism for recovering the costs of the service is in place.” Finally, upon satisfaction of the first two conditions, the PSAP must request the Phase I service from each wireless carrier in its area. The cost recovery mechanism was understood to apply to both the wireless carriers and the PSAPs.⁷ Three years later, however, the FCC concluded that “disputes about the meaning of the cost recovery mechanism have become a significant impediment to implementation of Phase I.”⁸ The agency therefore determined to “delete from the E911 rules the condition that requires a cost recovery mechanism for carriers to be in place before a wireless carrier is obligated to implement E911.” *Id.* Left in place, however, was the original condition that PSAPs be equipped to receive and utilize the Phase I data elements for E911. And this meant, effectively, that PSAPs must continue to be able to fund themselves:

⁶ King County filed its own diagrams for Phase I CAS and NCAS solutions in an ex parte memo from Marlys Davis to Blaise Scinto of the FCC dated June 21, 2000, marked as received by the agency August 15, 2000.

⁷ *Enhanced 911 Emergency Calling Systems*, 11 FCC Rcd 18676, 722 (1996).

⁸ November Order at paragraph 38, 14 FCC Rcd at 20866-67.

We view our PSAP cost recovery provision as a component of the PSAP's capability of receiving and utilizing the data elements of the E911 services. Nonetheless, by maintaining the provision as a prerequisite to a carrier's obligation to provide the services, we ensure that PSAP funding is addressed as an overall part of a PSAP request.⁹

A related issue: choice of transmission methods. In the November Order, the Commission hoped to remove another bone of contention between wireless carriers and public safety authorities: Who would have the final word on selection of alternative technologies for carrying out the Phase I and Phase II E11 implementations? From the carriers' perspective, the regional and even national scope of their service areas made it crucial for the wireless service provider to control choice of technology. They did not want the potentially disparate preferences of local PSAPs to interfere with economies of scale and operational efficiencies they said could be achieved by uniform deployment of single solutions across large territories. But public safety authorities also had more at stake than the interests of single PSAPs. Their jurisdictions typically consist of states, regions or counties with multiple PSAPs. They, too, saw advantages in uniform technology. While public safety officials expected to be able to reach agreement with carriers in most cases, they felt that veto power ought to rest with the public bodies who would be paying for the technology through reimbursements to carriers.

The Cellular Telecommunications Industry Association ("CTIA") asked the Commission to declare that wireless carriers should have the final say in choice of technology. The agency declined to change its rules to that effect, but offered staff resources to resolve what it hoped would be rare disputes. Most importantly, the FCC expected that deleting

⁹ 14 FCC Rcd at 20879. The revised rule at Section 20.18(j) now requires that "a mechanism for recovering the Public Safety Answering Point's costs of the enhanced 911 service is in place." 14 FCC Rcd at 20900.

carrier reimbursement from its cost recovery regulations “should change the dynamics of such discussions and should greatly reduce, if not eliminate, unresolvable disputes between PSAPs and carriers on technology choices.”

Presumably, PSAPs and States should be significantly less concerned now with the costs associated with the CAS or NCAS transmission methods when an E911 charge need only recover the PSAP’s costs and not the carrier’s costs.

14 FCC Rcd at 20885.

Discussion. These twin expectations from the November Order of less than a year ago should guide the answers to the questions posed by the King County Letter. The Commission expected that deleting wireless carrier cost recovery would remove a major impediment to Phase I E911 implementation by eliminating or diminishing disputes over dollars. Similarly, the agency trusted that relieving public safety authorities and legislative bodies of the requirement to reimburse wireless carrier implementation costs would “change the dynamics” of technology choice discussions and speed E911 implementation.

Now it appears that some carriers in Washington State – presumably reflecting the views of their national or regional parent companies¹⁰ – are re-introducing conflict through the back door. They are saying to King County: “We’ll pay our own costs, but the costs are all (or mostly) yours. As for technology choice, that still belongs to us carriers but we expect public safety to pay for our upgrades.” In short, the wireless carriers are looking to rescind the November Order – a decision which few carriers challenged afterward but most

¹⁰ King County has advised NENA officers informally that even the wireless carriers who originally agreed to pay for the network and database components identified in its Letter have since reneged.

disapproved.¹¹ The Public Safety Communicators urge the Commission not to allow the prior obstruction of “who pays?” to become a new obstruction of “who pays for what?”

Issue No. 1. “Whether a clearly defined demarcation point exists in the E911 network that separates the responsibilities of carriers and PSAPs for providing the various components or upgrades needed to implement Phase I technologies.” (Public Notice, 2) For these purposes, the FCC has defined the E911 network to include “all facilities and equipment beyond the wireless carrier’s switch necessary to transmit wireless 911 calls to PSAPs.” (Notice, note 3)

Short answer: For the reasons explained below, wireless carriers should have financial responsibility for network connections and database functions up to and including the interface with the Selective Router.

Basic 911 Service. The simplest form of 9-1-1 call routing is illustrated by the NENA tutorial slide at Exhibit C. The wireless carrier’s Mobile Switching Center, or MSC, translates the 911 digits into the seven or 10 digits representing a conventional telephone number of the PSAP and delivers the emergency call to the Public Switched Telephone Network (“PSTN”) by means of an already-established connection between the MSC and the Access Tandem. Unless the emergency caller subscribes to Caller ID, no number or location information attaches automatically to the call. Instead, this arrangement merely satisfies the “Phase Zero” requirement for basic 911 service at Section 20.18(b) of the Rules.

In many areas of the country, this basic capability to dial 9-1-1 and reach a PSAP from a wireless phone long predates the Commission’s E9-1-1 rules. To the best of our knowledge,

¹¹ Comments of Cellular Telecommunications Industry Association supporting petitions for reconsideration of November Order, March 22, 2000. See also, *Telecommunications Reports*, November 22, 1999, page 22, quoting PCIA President Jay Kitchen.

wireless carriers have not disputed paying for number translation functions in their MSCs and for the lines connecting the MSCs to the PSTN. Nor have PSAPs objected to paying for the conventional telephone service that allows receipt of basic 9-1-1 calls.

E9-1-1. Enhanced 9-1-1 differs from the basic service by the feature of Selective Routing. This describes the ability to route an emergency call to the particular PSAP which – by reason of proximity, jurisdiction or other factors – has been designated to receive calls originating in that location. A diagram of wireline E9-1-1 is shown and explained at Exhibit A. Two elements not appearing in the basic wireless diagram (Exhibit C) are the Master Street Address Guide (“MSAG”) and the Selective Routing Database (“SRDB”). They perform caller location functions for the wireline network of stationary telephones which are not present in basic wireless service.

In one form or another, PSAPs are accustomed to paying for the wireline caller location functions of the MSAG and the SRDB. Some PSAPs build and maintain their own databases. Others pay wireline local exchange carriers or third-party vendors to carry out these tasks. Frequently, competitive local exchange carriers (“CLECs”) will also purchase such services from incumbent LECs or independent vendors.¹²

Wireless E9-1-1 service does not have the long history associated with wireline emergency calling. Phase I implementation has not yet produced a set of common practices from state to state or even county to county. Nevertheless, it is possible to discern from the existing record in Docket 94-102 the outlines of what wireless carriers consider to be E9-1-1

¹² Typically, where 9-1-1 service exists it is considered a core obligation of a new wireline telephone company, enforceable under state law.

upgrade costs for Phase I. Nextel, for example, has classified these expenses as “non-recurring” and “recurring:”

NRCs [Non-Recurring Charges] include, but are not limited to: documented development, start-up, testing, purchasing and installing equipment; network upgrades to achieve Phase I E911 service compatibility; loading of information into ALI databases; establishing all necessary network connectivity design, development and implementation of the wireless provider’s operations; and other general E911 Phase I costs that may arise during the development, start-up, implementation and operation of Phase I E911 services. These costs can occur at initial implementation, and as the wireless carrier purchases additional E911 hardware and software as it adds cell sites and expands its network. . . .

Recurring costs included, but are not limited to: costs associated with services provided the carrier by E911 vendors, monthly LEC charges paid by the carrier that are associated with the provision of E911 services, and other internal Phase I E911 recurring costs documented in the carrier’s E911 Phase I cost model . . .

Comments, September 14, 1999, pages 9-10.

U.S. Cellular (“USC”) discusses its negotiations with incumbent LECs over costs for selective routers and for T-1 lines to connect its MSCs to the PSTN. Responding to King County’s criticism that wireless carriers in Washington State have provided costs only on a per-subscriber basis, USC states:

The fact of the matter is that most wireless carriers, like USC, have contracted with third-party E911 vendors to handle the implementation of Phase I E911 nationwide. Since the per subscriber amount (or a per PSAP price) is the precise amount that the carriers will be charged by the vendors, that is their *true* cost.¹³

Other wireless carrier comments identify several states where the combination of an early start on Phase I implementation and the development of cost recovery rules under centralized

¹³ Comments, September 15, 1999, pages 8, 12 and 17, emphasis in original at 12. *See also, Communications Daily*, September 7, 200, 6-7 (AT&T Wireless contracts with SignalSoft for Phase II service, following on similar agreement for Phase I implementation.)

administration appears to have produced substantial data on reimbursement. These include Alabama (BellSouth Comments, 9/14/99, Attachment 1), Colorado (AirTouch, 9/14/99, 11; AT&T, 8/9/99, 3), Indiana (AirTouch, 9/14/99, 12-13; USC, 9/15/99, 15-17; November Order, 14 FCC Rcd at 20865-66) and Oregon (AirTouch, 12; AT&T, 8/9/99, 2). Even where carrier applications for reimbursement are submitted confidentially, the extraction of information about categories of costs without attribution to any particular carrier would be useful.

However, this kind of detail probably is not needed in order to resolve Issue No. 1. The foregoing suggests that it might be more accurate to speak of several Phase I upgrade elements or components which are the responsibility of the wireless carrier. These may be distributed across the combined wireless/wireline networks, especially where a third-party vendor is involved, rather than residing behind a single “demarcation point” separating the wireless carrier from the LEC and the PSAP. Taking the King County Letter and the County’s comments of August 3, 1999 together with the cited portions of comments from Nextel and USC, it can be readily stated that, prior to the November Order, wireless carriers were at least expecting to incur costs for upgrading their MSCs for selective routing functions, and connecting the MSCs to selective routers. If the chosen solution were NCAS (Exh. E), each MSC would connect to an NCAS vendor as well as selective routers. If it were CAS (Exh. D), the connection to the router would suffice to carry 20 digits for E911 calls. Nothing in the less-detailed comments of other wireless carriers contradicts the above.

Conclusion, Issue No. 1. If wireless carriers saw these new elements of Phase I service as their responsibility prior to the November Order, nothing physically has changed since the Order. The record supports the King County request, and the Public Safety Communicators agree, that wireless carriers take financial responsibility for network connections and routing database functions up to and including the interface with the Selective Router. These elements

have been identified by wireless carriers as their costs, and remain so independently of the issue of reimbursement.

This demarcation of responsibility does not mean that states or counties necessarily are bound by it. The structure of the November Order is to continue to allow 9-1-1 Authorities and both wireless and wireline carriers (with utility commission input, if required) to work out issues of cost recovery. For those jurisdictions, however, which have yet to adopt a cost recovery mechanism, and which prefer clear segregation of carrier-paid upgrades from PSAP-paid upgrades, a workable and fair delineation already exists on the record of this docket. The Commission need only adopt formally what most wireless carriers already have acknowledged as their acceptable allocation of Phase I upgrades.

King County has proposed a workable and fair delineation: Wireless carriers pay up to the Selective Router, including the interface. PSAPs pay from the Router to their premises. The Public Safety Communicators endorse this resolution of Issue No. 1.

Issue No. 2. “Whether the appropriate demarcation point between wireless carrier, LEC and PSAP responsibility to provide the various components or upgrades needed to implement Phase I will vary according to the technology employed to deliver those services?”

As noted above, the concept of wireless carrier elements of responsibility distributed across combined networks may be preferable to single physical points or lines of demarcation. In the NCAS illustration at Exh. E, the MSC must be upgraded for location routing functions and linked to an NCAS vendor and the E9-1-1 Control Office (Selective Router). Routing database creation and maintenance have been acknowledged by wireless carriers as their responsibility, typically through contracting with an NCAS service vendor.

In the CAS model at Exh. D, the absence of an NCAS vendor from the diagram does not signify the absence of number translation requirements. The callback number is delivered directly via the SS7 or FGD connection from the MSC to the Selective Router and thence to the PSAP as part of the “20 Digit ANI.” But the other part of that digital stream is the pseudo-ANI (“pANI”) which is delivered as a code used to query the ALI database for the cell/sector data of the point where the wireless call originates. In order for that query to be answered accurately, the 9-1-1 (ALI) Database must contain complete and reliable cell/sector data. Although the wireless carrier creates and supplies this data, the PSAPs retain responsibility for its maintenance as fixed records in the 9-1-1 Database.

Conclusion, Issue No. 2. In both the NCAS and CAS examples, the wireless carrier must connect to a Selective Router and must arrange for wireless routing data to be created and supplied, directly or through third-party vendors. Thus, the Public Safety Communicators believe that the assignment of responsibility to the wireless carrier need not vary with technology, although technical differences may lead to different economic arrangements. We say “need not vary” advisedly. As pointed out previously, state and local 9-1-1 Authorities remain free under the November Order to allocate wireless and wireline carrier and PSAP responsibilities as they and their legislative and regulatory bodies see fit. Our responses are attempting to make the case for the 9-1-1 Authority –such as King County here -- that wishes to accept some fair level of responsibility for its own PSAP upgrades¹⁴ while leaving the rest of the implementation responsibilities to the wireless and wireline carriers.

Issue No. 3. “Whether there is a rationale or precedent, based on the implementation of *wireline* E911 networks, for a particular division of costs among carriers and PSAPs in the

¹⁴ A discussion of PSAP equipment types is found at Exh. B.

implementation of wireless Phase I technologies? What is the division of costs between LECs and PSAPs in the provision of *wireline* E911 networks? Although the Commission has not imposed special obligations on LECs in implementing *wireless* E911, whether certain costs associated with Phase I technologies should be borne or shared by LECs?”

The Public Safety Communicators do not believe that the rationales or precedents associated with wireline E9-1-1 deployment are essential in implementing wireless E9-1-1. Some states have agreed with wireless carrier arguments that because wireline telephone companies are often paid for their services by PSAPs, so wireless carriers should be reimbursed as well. Other states, however, and the FCC in its November Order, have emphasized that wireless carriers are not dependent on public approval of cost recovery because their rates are not regulated. At the moment, Washington State is in this latter camp.

From the beginning, PSAPs have been customers of wireline telephone companies. The NENA tutorial slide at Exh. C, referenced earlier, explains how basic 9-1-1 wireless service operates through the same connection to the PSTN used in non-emergency wireless calling. Basic 9-1-1 service functions because the PSAP is a wireline customer reachable by dialing seven to 10 digits, and because the wireless carrier’s MSC translates the digits 9-1-1 into one of those PSAP conventional telephone numbers. But there is no customer relationship between the PSAP and the wireless carrier.

Of course the development of wireline E9-1-1 imposed costs on both the LEC and the PSAP. The extent to which the telephone company is compensated by special surcharges or by rates authorized by state public utility commissions will vary from jurisdiction to jurisdiction. In the latter case, the PSAP may take various E9-1-1 network and database services from the

LEC under approved tariffs. Some 9-1-1 Authorities actually construct and own network elements which otherwise would be leased at tariffed rates.

By contrast, neither the entry into wireless service nor the rates for the service may be regulated, at this time, by state utility commissions.¹⁵ The Commission made this significant difference between wireless and wireline telephony an important foundation for its November Order to dispense with a funding mechanism for wireless carrier cost recovery as a prerequisite to E9-1-1 implementation:

40. Our amendment of the rule does not mean that wireless carriers may not recover their costs in implementing E911. Because their rates are deregulated, CMRS carriers may recover their service costs through those rates without waiting for a State-adopted mechanism. . . .

52. . . . Unlike carriers whose rates we regulate, there is no question that wireless carriers can increase their rates, if they wish, to recover any additional costs incurred in implementing E911.

14 FCC Rcd at 20867, 20872. The Commission was careful to reassure those 911 Authorities and carriers who already had developed carrier cost recovery mechanisms, or which preferred to adopt such plans in the future, that the November Order would be no bar. It clearly concluded, however, that those jurisdictions wishing to confine funding mechanisms to meeting PSAP costs, narrowly defined, would not be harming wireless carriers in doing so.

The responsibilities of the LECs for wireless E9-1-1 have not been specified by the FCC and are not always clear under state law. The record in this docket is mixed, with good to modest success in achieving wireline carrier cooperation in states like Alabama (BellSouth

¹⁵ Section 332(c)(3) provides for state regulation of wireless rates upon petition demonstrating market failure to protect consumers or upon wireless telephony becoming a replacement for wireline service in a substantial portion of a given state.

Comments, 9/14/99, 3-7 and Attachment 1) but with much unhappiness in midwestern states served by Ameritech (USC Comments, 9/15/99, 8, 17).

Pending at the FCC is a “Conditional Petition for Maximum Sanctions” filed by the Texas Commission on State Emergency Communications July 12, 2000. While directed chiefly against Texas wireless carriers failing to honor requests for E9-1-1 service, the petition also alleges (4-5, nn.6,7) possible wireline complicity in delayed implementation.¹⁶ The Texas Commission earlier, in company with many local 9-1-1 Authorities in the state, had asked the FCC to take note of “interoperability” problems whose solution called for full cooperation by wireline telephone companies.¹⁷

The Texas Commission has engaged its state utility regulatory body in the discussions of E9-1-1 implementation responsibilities for LECs, and that probably is where the issues belong in the first instance. But there would be no harm in the FCC’s strong statement that its E9-1-1 complaint processes are open to allegations of foot-dragging, price-gouging or other wrongful behavior by the telephone companies whose networks and services are needed to make both Phase I and Phase II of wireless E9-1-1 a success.

CONCLUSION

For the reasons discussed above, the Commission should accept the foregoing responses of the Public Safety Communicators as the basis for granting King County’s request for a

¹⁶ See also, petitions for waiver of six-month Phase I fulfillment rule by seven Texas wireless providers serving rural areas, filed August 31, 2000, and alleging obstructions and delays by incumbent wireline telephone companies SBC and GTE. All the petitions are posted on the FCC’s Electronic Comment Filing System under Docket 94-102.

¹⁷ Public Notice, DA 98-1652, on Joint Petition to Ensure Interoperability of 911 Emergency Calling Systems, RM-9343, released August 18, 1998.

delineation of wireless carrier and PSAP financial and operational responsibilities for implementation of Phase I wireless caller identification and location pursuant to Section 20.18 of the Rules. To the extent that an FCC order to the Washington State carriers is required to break the impasse described in the King County Letter, the order should be part of the decision.

Respectfully submitted,

PUBLIC SAFETY COMMUNICATORS

By

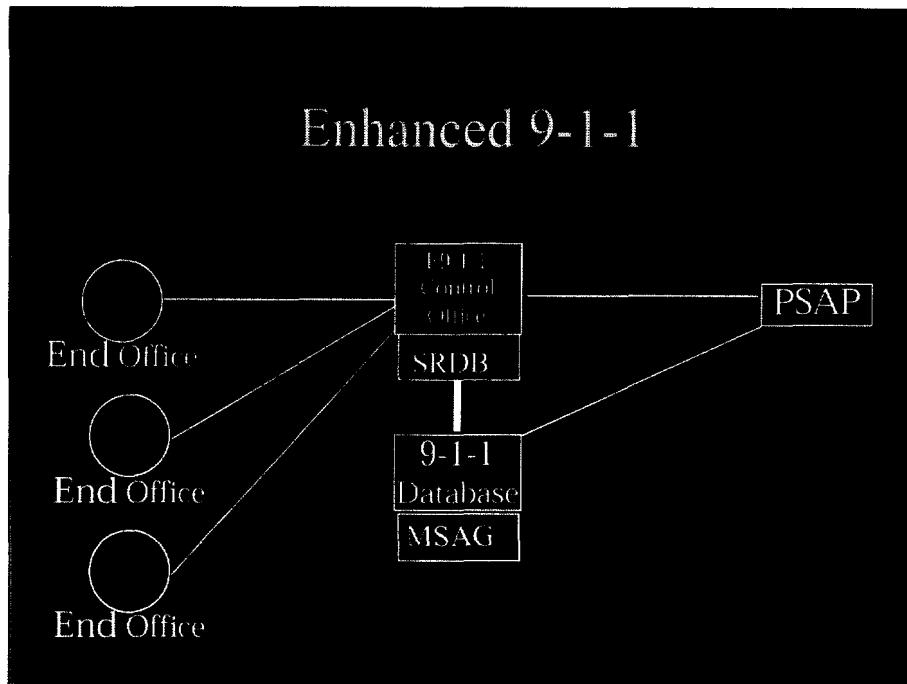


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THEIR ATTORNEYS

September 18, 2000



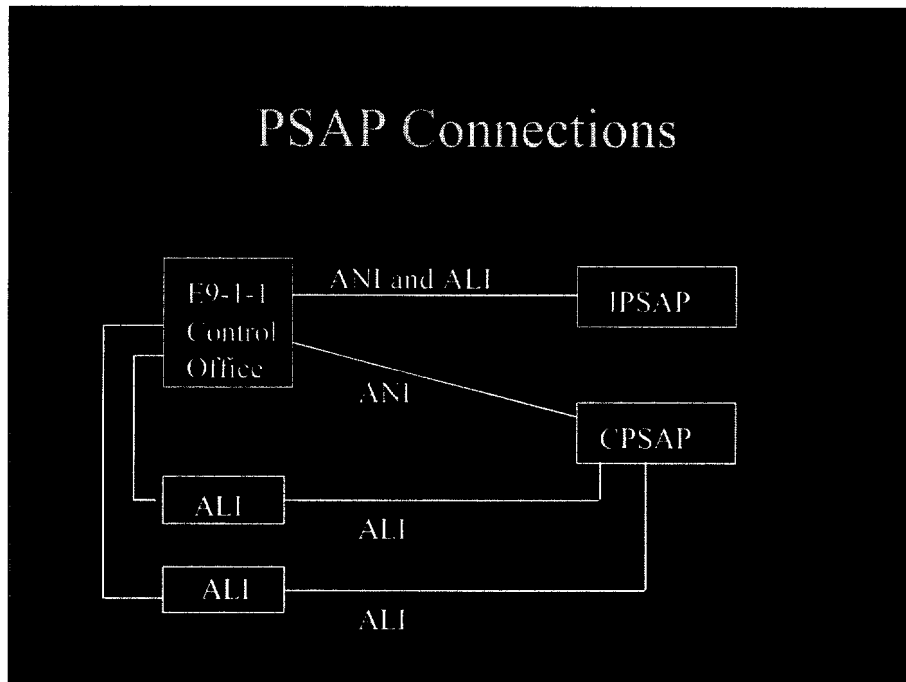
The feature that separates Basic 9-1-1 from Enhanced 9-1-1 is Selective Routing. Basic systems may have both ANI and ALI, but are not considered Enhanced until Selective Routing is added.

Generally speaking, Enhanced 9-1-1 systems will feature Selective Routing, ANI, ALI, Selective Transfer and Fixed Transfer. Selective Transfer enables one-button transfer capability to the Police, Fire and EMS agencies listed on the ALI display. Fixed Transfer is another name for speed dialing.

Enhanced 9-1-1 requires the addition of three components to our diagram - the Master Street Address Guide (MSAG), a link from the database to the 9-1-1 Selective Routing Tandem, and a Selective Routing Database (SRDB) associated with the tandem.

Selective Routing is the process by which 9-1-1 calls are delivered to a specific PSAP based upon the street address of the caller. Selective Routing Tandems (aka E9-1-1 Control Offices), however, don't understand addresses - they understand numbers. This means that street addresses have to be converted into numbers the Router can use.

For E 9-1-1, street address ranges are associated with Emergency Service Zones representing unique sets of Police, Fire, and EMS jurisdictions. These Zones are numbered with Emergency Service Numbers (ESNs), and DBMS processing then provides TN-ESN data relationships - the SRDB data that controls ANI-based call routing in the Selective Routing switch.

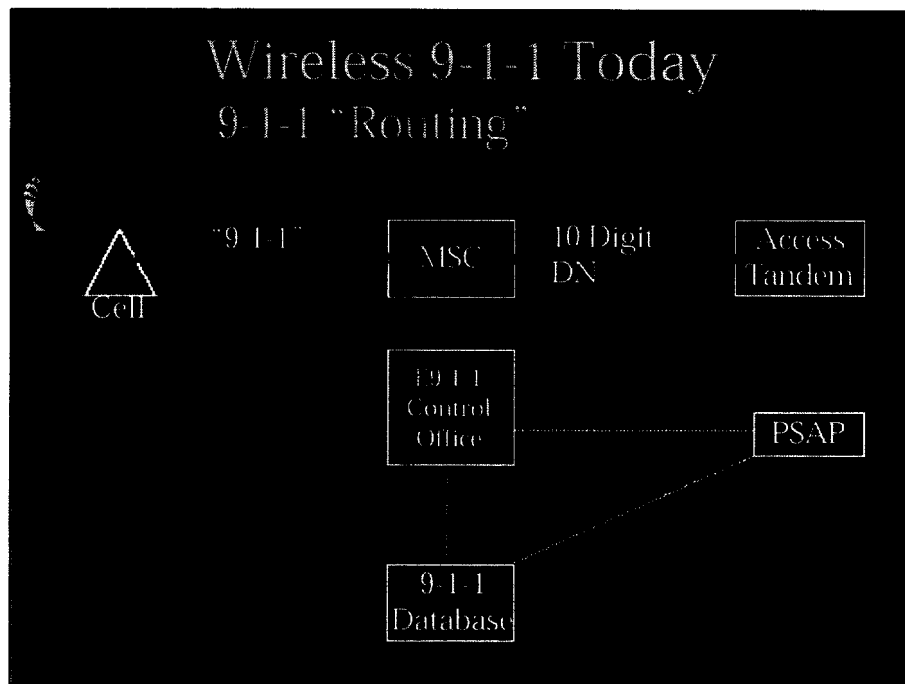


PSAP equipment falls into two basic types - Conventional and Integrated.

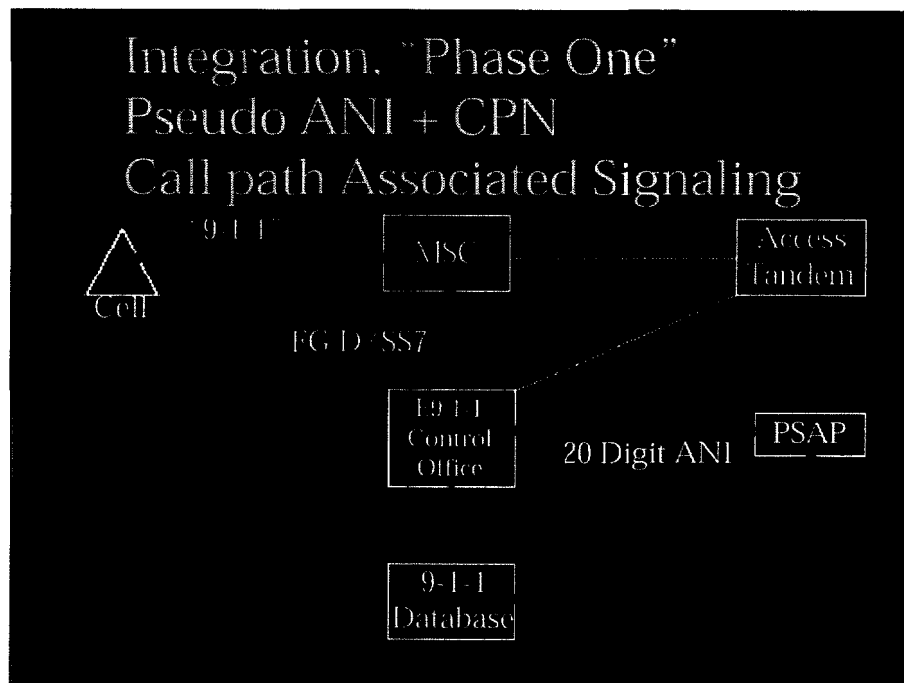
Conventional equipment (CPSAP) receives ANI over the voice trunk at the beginning of the call. The PSAP equipment sends a query (using the caller's ANI) to the ALI database system over dedicated data links. The ALI is returned over one or both of the links (This is dependent on the database configuration and the type of equipment at the PSAP. Most PSAP CPE can accept two responses.)

Examples of Conventional PSAPs are Plant Equipment, Lucent, Motorola, CML, Emergitech, Positron and TCI.

Integrated PSAPs receive both ANI and ALI from the 9-1-1 tandem. The tandem queries the ALI database as the call is processed. Depending on manufacturer, the connection between the tandem and the PSAP may be one circuit or two. Selection of Integrated PSAP equipment is dependent upon the tandem. Also, depending again on manufacturer, additional automatic call distribution (ACD) features (call queuing, announcements, equitable call distribution, management reports) may be provided by the tandem. Examples of Integrated PSAPs are Rockwell, KML, (which require a Rockwell tandem) CML (which requires a CML tandem) and NorTel (which requires a NorTel tandem).



In most of North America, 9-1-1 calls from wireless phones are treated as if 9-1-1 was a speed dial code - 9-1-1 is translated by the Mobile Switching Center (MSC, the wireless equivalent of a central office) to a preset 7 or 10-digit number. Calls bypass the 9-1-1 network and arrive at the PSAP via the public switched telephone network. Some wireless carriers are now offering Caller ID, but typically, there is no information delivered with the call.



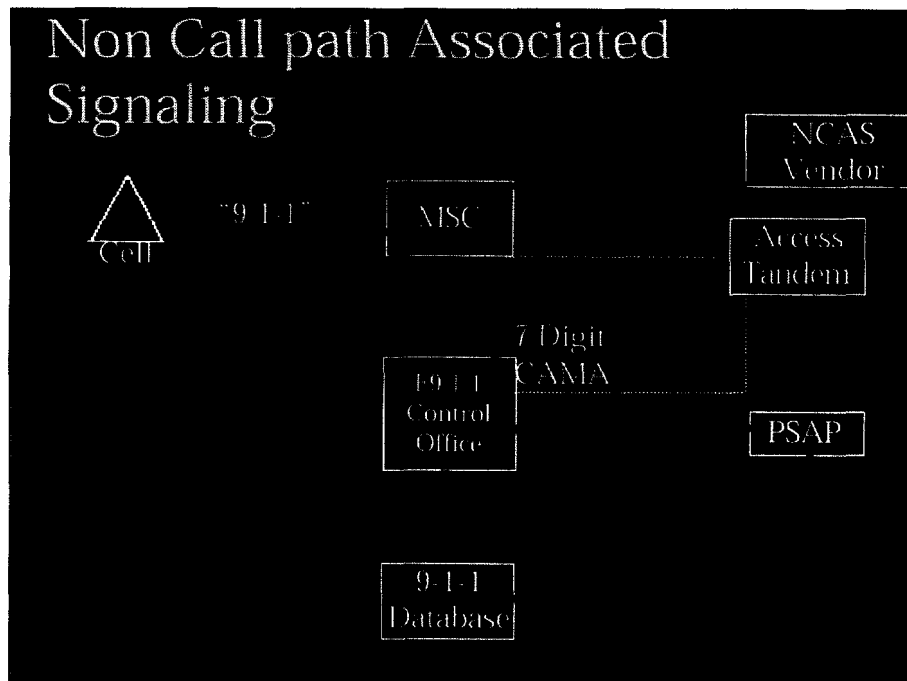
FCC Report and Order 96-264 requires that wireless 9-1-1 service be provided in two stages. Phase I, which carried a target date of April 1, 1998, calls for the delivery of cell/sector information, as discussed on the previous slide, plus a callback number for the mobile phone.

To accomplish this, the pANI plus the callback number must be delivered to the PSAP. However, the voice trunks typically used for 9-1-1 until now are only capable of delivering one, 8-digit number (NPD plus 7 digit ANI).

There are two choices for trunks that can carry two, ten-digit numbers from the MSC to the 9-1-1 tandem. Signaling System 7 (SS7) is the digital version and Feature Group D signaling (also referred to as Enhanced MF) is the analog version. Selection of one method over the other is based upon the capabilities of the two switches.

The signaling method between the 9-1-1 tandem and the PSAP also has to be upgraded to carry a minimum of 20 digits. The digital method, used today in a very small number of pilot PSAPs is ISDN. The analog version, developed by the NENA Network Technical Committee, is called Enhanced MF Signaling. This method is now being supported by all the major switch and CPE manufacturers.

Once the two numbers are delivered to the PSAP, the pANI is used to query the ALI database for the cell/sector data, and the callback number is displayed to the call taker on the ANI display.



The delivery of pANI and callback number via SS7, Feature Group D signaling, ISDN and Enhanced MF is called "Call path Associated Signaling", or CAS. With CAS, the pANI that identifies the cell/sector and the callback number are delivered to the PSAP with the voice call.

An alternative is NCAS, or "Non-Call path Associated Signaling". NCAS was devised as a method to deliver the same information to a PSAP that could not afford upgrades to the selective router and PSAP, or where the selective router and/or PSAP were not upgradable. Instead, an upgrade is made to the ALI database to accept call related data from an outside source, "on the fly", for delivery to the PSAP.

When a wireless 9-1-1 call is placed, the MSC queries the third party vendor for routing information. The NCAS vendor supplies a routing number which is transmitted as a pseudo-ANI to the 9-1-1 tandem. This number may identify the cell/sector; may be one of a block of numbers associated with a cell/sector (ESRD); or may be one of a block of numbers that only identify the destination PSAP or ESN (ESRK). When the receiving PSAP queries the ALI database with that number, the pALI record and callback number, supplied by the vendor, is delivered to the PSAP.

The positive about NCAS is that it does not require upgrades to the 9-1-1 tandem and PSAP CPE, which may be expensive. The negatives are that the ANI delivered with the call may mean nothing if the ALI does not arrive, and that it supports wireless but does nothing for number portability or area code exhaust. ISDN and Enhanced MF support all three through the delivery of one or two full ten digit numbers.